Public Abstract

Digital mapping of buried pipelines with a dual array system

The objective of this research is to develop a non-invasive system for detecting, mapping and inspecting steel and plastic pipelines, by combining measurements from radar and electromagnetic induction sensors with precise positioning and advanced image processing.

This new approach will provide for the detection of all underground utilities, including plastic pipelines. The primary task will consist of:

1. Development of a mobile wideband array system with 3-component sensors and software;
2. Fabrication and testing of EMI sensors;
3. Integration of EMI and radar sensors; and
4. Development and integration of an on-board transmitter.

The combined radar and EMI system of arrays will produce digital underground maps and images in CAD and GIS formats. The expected results of this R&D effort will be a mobile wideband array with 3-component induction sensors and inversion software that increase the comprehensiveness of radar system use for underground imaging.

Witten Technologies has teamed with ConEdison, Electromagnetic Instruments, Inc and New York City. The companies' respective locations are as follows:

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